

Introduction

For a project to be successful, it has to be planned and managed so that the project objectives are achieved. A comprehensive plan ensures adequate planning for all the aspects that are necessary for project success. A plan is used to execute the project, and to monitor and control it.

Software project management plays a critical role in the success of a project. It is an activity that requires organization, experience, commitment, and luck.

Course objectives

This course will enable you to:

- Explain what software project management is, how a project team is organized, and how the project schedule is created and used.
- Explain the importance of estimation and product scope in project planning and how the grammatical parse technique and the decomposition and empirical approaches help in understanding the scope and estimating.
- Explain the importance of measuring the product size, types of measurements required, and the techniques used for measuring the size of the product.
- Explain the importance of outsourcing in software project management and how alternative development approaches are evaluated using the decision tree and the expected value techniques.
- Explain the importance of risk management in software project management, the basic concepts related to risks, the risk management model, and the risk categories.

Software Project Management course includes:

- **Basic Concepts of Software Project Management**

This section will enable learners to understand what software project management is, how a project team is organized, and how a project schedule is created and used.

Content

- An Overview of Software Project Management
- Team Organization
- Project Scheduling

Duration: 8.5 hours

- **Software Project Measurement and Metrics**

This section will enable learners to understand the importance of measurement and the types of measurements and metrics required for managing a software project.

Contents

Measurement as a Foundation for Software Project Management
Types of Measurements in Software Projects

Duration: 3.5 hours

- **Basic Concepts and Techniques of Estimation**

This section will enable learners to appreciate the importance of estimation in project planning. They will also learn about grammatical parse technique and the decomposition and empirical approaches in estimation

Contents

- The Importance of Estimation in Software Project Management
- Defining the Product Scope
- The Grammatical Parse Technique
- Estimating Using the Empirical & Decomposition Methods

Duration: 6.5 hours

- **Measuring the Size of Software Products**

This section will enable learners to understand the importance of measuring the product size, the basic procedure for computing function points, and the backfiring technique

Contents

- Measurement of Software Product Size
- Basic Procedure for Computing Function Points
- The Backfiring Technique

Duration: 6.5 hours

- **Outsourcing Project Work**

This section will enable learners to understand the importance of outsourcing in software project management and how alternative development approaches are evaluated using the decision tree and the expected value techniques

Contents

- Outsourcing Options in Software Projects
- Comparing the Costs of Alternative Development Approaches

Duration: 5 hours

- **Risk Management**

This section will enable learners to understand the importance of risk management in software project management, the basic concepts related to risks, the risk management model, and the risk categories

- Risk Management in the Context of Software Project Management
- Basic Concepts Related to Risks
- The Risk Management Model
- Identifying Risks

Duration: 7 hours

Introduction

Software project management is the discipline used for managing projects effectively. It is a challenging activity and plays a critical role in the success of a project.

Estimation is one of the key aspects of [software project management](#). It helps in estimating the work to be done and the effort required. However, as the project progresses, there are gaps between the planned and actual estimates. **Project monitoring and control** are required to ensure that the project targets are achieved.

Basic Concepts of Software Project Management course includes:

- An Overview of Software Project Management
- Team Organization
- Project Scheduling

Course Benefits

This course will enable you to:

- Explain *what software project management involves* and why it is important.
- Explain *how teams can be organized* for working effectively on a project.
- Explain *what a project schedule is* and how it is created and used.

Content Brief

While planning at the beginning of the project, the product size and the effort and schedule required to build the product are estimated at a broad level. The planning

activity should consider aspects such as team organization that are required to make a feasible and comprehensive plan. *During detailed planning*, the activities needed for executing the project are identified and a schedule for project execution, monitoring, and control is established.

Software projects require problem solving with team effort. Therefore, people are the most critical resource in any project. The role of the project manager is critical to project success. There are various types of team structures—democratic decentralized, controlled centralized, and controlled decentralized. The team structure for a project is selected based on the suitability of the structure to the project characteristics and the organization culture.

A schedule is a very important *part of detailed planning*. It is used for the execution of various project activities because it provides the basis for allocating work, monitoring it, and taking corrective action. Scheduling is done using **certain principles**. These principles are:

- Compartmentalize the project into manageable tasks.
- Allocate appropriate time for each task.
- Define responsibilities for each task.
- Specify a defined outcome for each task.
- Identify the interdependency of tasks.
- Define the milestones based on the completion of a set of tasks.
- Validate the effort.

The steps that are followed for scheduling are defining the process that the project will follow, defining the tasks for the project, estimating the effort and the time for each task, defining the interdependencies, creating a task network, and adjusting it to conform to the required delivery date